

Abstract

Nanotube films and articles and methods of making the same are disclosed. A conductive article includes an aggregate of nanotube segments in which the nanotube segments contact other nanotube segments to define a plurality of conductive pathways along the article. The nanotube segments may be single walled carbon nanotubes, or multi-walled carbon nanotubes. The various segments may have different lengths and may include segments having a length shorter than the length of the article. The articles so formed may be disposed on substrates, and may form an electrical network of nanotubes within the article itself. Conductive articles may be made on a substrate by forming a nanotube fabric on the substrate, and defining a pattern within the fabric in which the pattern corresponds to the conductive article. The nanotube fabric may be formed by growing the nanotube fabric on the substrate using a catalyst, for example, in which the catalyst is a gas phase catalyst, or in which the catalyst is a metallic gas phase catalyst. The nanotube fabric may be formed by depositing a solution of suspended nanotubes on the substrate. The deposited solution may be spun to create a spin-coating of the solution. The solution may be deposited by dipping the substrate into the solution. The nanotube fabric is formed by spraying an aerosol having nanotubes onto a surface of the substrate.